

## Claims:

- 10053535 011502
1. A pharmaceutical composition for use as a therapeutic agent comprising a gas comprising:
- 0% to about 79% by weight nitrogen gas;
  - about 21% to about 100% by weight oxygen gas; and
  - about 0.0000001% to less than 0.3% by weight carbon monoxide gas.
2. The composition according to claim 1 wherein said composition contains 0% nitrogen and about 100% oxygen.
3. The composition according to claim 1 wherein said composition contains 0% nitrogen and the amount of carbon monoxide in said composition ranges from about 0.0001% to about 0.075%.
4. The composition according to claim 1 wherein the amount of carbon monoxide in said composition ranges from about 0.0001% to about 0.075%.
5. The composition according to claim 1 wherein said composition contains 0% nitrogen and the amount of carbon monoxide in said composition ranges from about 0.005% to about 0.05%.
6. The composition according to claim 1 wherein the amount of carbon monoxide in said composition ranges from about 0.005% to about 0.05%.
7. A method for treating oxidative stress in a patient, said method comprising administering to said patient an effective amount of a gaseous composition comprising:

- 10053535.01502
- 201110.5555001
- a. 0% to about 79% by weight nitrogen gas;
- b. about 21% to about 100% by weight oxygen gas; and
- c. about 0.0000001% to about 0.3% by weight carbon monoxide gas.
8. The method according to claim 7 wherein said composition contains 0% nitrogen and about 100% oxygen.
9. The method according to claim 7 wherein said composition contains 0% nitrogen and the amount of carbon monoxide in said composition ranges from about 0.0001% to about 0.075%.
10. The method according to claim 7 wherein the amount of carbon monoxide in said composition ranges from about 0.0001% to about 0.075%.
11. The method according to claim 7 wherein said composition contains 0% nitrogen and the amount of carbon monoxide in said composition ranges from about 0.005% to about 0.05%.
12. The method according to claim 7 wherein the amount of carbon monoxide in said composition ranges from about 0.005% to about 0.05%.
13. A method of treating a patient suffering from a condition or disease state selected from the group consisting of asthma, emphysema, bronchitis, adult respiratory distress syndrome, sepsis, cystic fibrosis, pneumonia, interstitial lung diseases, idiopathic pulmonary diseases, primary pulmonary hypertension, secondary pulmonary hypertension, cancer, arthritis, wound healing, Parkinson's disease, Alzheimer's disease, peripheral vascular disease and pulmonary vascular

thrombotic disease comprising administering to said patient in need of treatment a gaseous composition comprising:

- a. 0% to about 79% by weight nitrogen gas;
- b. about 21% to about 100% by weight oxygen gas; and
- c. about 0.0000001% to about 0.3% by weight carbon monoxide gas.

14. The method according to claim 13 wherein said composition contains 0% nitrogen and about 100% oxygen.
15. The method according to claim 13 wherein said composition contains 0% nitrogen and the amount of carbon monoxide in said composition ranges from about 0.0001% to about 0.075%.
16. The method according to claim 13 wherein the amount of carbon monoxide in said composition ranges from about 0.0001% to about 0.075%.
17. The method according to claim 13 wherein said composition contains 0% nitrogen and the amount of carbon monoxide in said composition ranges from about 0.005% to about 0.05%.
18. The method according to claim 13 wherein the amount of carbon monoxide in said composition ranges from about 0.005% to about 0.05%.
19. The method according to claim 13 wherein said pulmonary vascular thrombotic disease is an embolism.

10053535 011502

20. A method for treating a patient suffering from inflammation comprising  
✓ administering to said patient an effective amount of a gaseous composition  
comprising:
- 0% to about 79% by weight nitrogen gas;
  - about 21% to about 100% by weight oxygen gas; and
  - about 0.0000001% to about 0.3% by weight carbon monoxide gas.
21. The method according to claim 20 wherein said inflammation is localized in the  
kidneys, brain, heart, liver, spleen, skin and lungs of the patient.
22. The method according to claim 20 wherein said inflammation is localized in the  
lungs.
23. The method according to claim 20 wherein said composition contains 0% nitrogen  
and about 100% oxygen.
24. The method according to claim 20 wherein said composition contains 0% nitrogen  
and the amount of carbon monoxide in said composition ranges from about  
0.000001% to about 0.075%.
25. The method according to claim 20 wherein the amount of carbon monoxide in said  
composition ranges from about 0.0001% to about 0.075%.
26. The method according to claim 20 wherein said composition contains 0% nitrogen  
and the amount of carbon monoxide in said composition ranges from about 0.005%  
to about 0.05%.

10055535 01502

27. The method according to claim 20 wherein the amount of carbon monoxide in said composition ranges from about 0.005% to about 0.05%.
28. The method according to claim 13 wherein said inflammation is secondary to sepsis.
29. A method of inducing HO-1 enzyme in a patient, said method comprising administering to said patient an effective amount of a gaseous composition comprising:
- a. 0% to about 79% by weight nitrogen gas;
  - b. about 21% to about 100% by weight oxygen gas; and
  - c. about 0.0000001% to about 0.3% by weight carbon monoxide gas.
30. A method of reducing the likelihood of rejection of an organ in an organ transplant patient, said method comprising administering to said patient an effective amount of a gaseous composition comprising:
- a. 0% to about 79% by weight nitrogen gas;
  - b. about 21% to about 100% by weight oxygen gas; and
  - c. about 0.0000001% to about 0.3% by weight carbon monoxide gas.
31. The method according to claim 30 wherein said composition contains 0% nitrogen and about 100% oxygen.
32. The method according to claim 30 wherein said composition contains 0% nitrogen and the amount of carbon monoxide in said composition ranges from about 0.0001% to about 0.075%.

20251015 10053535

33. The method according to claim 30 wherein the amount of carbon monoxide in said composition ranges from about 0.0001% to about 0.075%.
34. The method according to claim 30 wherein said composition contains 0% nitrogen and the amount of carbon monoxide in said composition ranges from about 0.005% to about 0.05%.
35. The method according to claim 30 wherein the amount of carbon monoxide in said composition ranges from about 0.005% to about 0.05%.
36. The method according to claim 30 wherein said organ is a heart or lung.
37. A method of enhancing the storage stability of an organ in storage media prior to being transplanted into a patient, said method comprising dissolving into said storage media either before or during the storage of said organ an effective amount of carbon monoxide to reduce oxidative damage to said organ associated with storage.
38. The method according to claim 36 wherein said carbon monoxide is dissolved into said storage media by bubbling into said media a gaseous composition comprising:
- 0% to about 79% by weight nitrogen gas;
  - about 21% to about 100% by weight oxygen gas; and
  - about 0.0000001% to about 0.3% by weight carbon monoxide gas.
39. A method of diagnosing oxidative stress or a risk of oxidative stress in a patient, said method comprising measuring CO in breath exhaled by said patient.

10053535-011502

40. The method according to claim 39 wherein said oxidative stress is secondary to sepsis.

41. A method of diagnosing the risk of sepsis or septic shock to a patient, said method comprising measuring CO in breath exhaled by said patient.



10053535 "011502